

## REMARKS

Applicants thank the Examiner for the Office Action of July 14, 2008. This Amendment is in full response thereto. Thus, Applicants respectfully request continued examination and allowance of the application.

### **First Claim Rejection Under 35 U.S.C. § 103:**

Claims 1-7, 11-16, 18-29, 34, and 37-39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Barker (US 3,860,479) in view of Naeem (US 6,193,832) or Hatano (US 5,919,726).

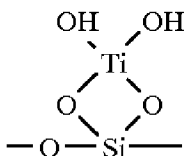
With respect to claims 1-7, 11-16, 18-29, and 34, Applicant respectfully traverses because Barker, Naeem, and Hatano, alone or in combination, fail to disclose, teach, or suggest the claimed subject matter, in particular:

at least one oxidation promoter element prepared by: coating at least a portion of a metallic substrate with a coating of organic polymer material such that one side of the coating material is adjacent the substrate and an opposite side of the coating is not exposed to the substrate; applying an oxidation promoter to the opposite side of the coating such that the oxidation promoter is at least partially embedded in the coating material (the oxidation promoter promoting the oxidation of the sodium sulfide to generate polysulfide and comprising a transition metal oxide); and baking the oxidation promoter and coating of organic polymer material.

To the extent that Barker addresses the above limitations, it discloses a slurry of catalytic metal compound (col 2, Ins. 20-28), a tower packed with large particles of catalytic metal compound (col 2, Ins. 35-37), or a tower packed with catalytic metal compound coated over standard tower packing such as Raschig rings Beryl saddles (col 2, Ins. 37-40). Barker also discloses that the catalytic metal compound may be oxides or sulfides of Mn, Cu, Fe, Co, Zn, Al, Ni, or Cr. Barker fails to disclose, teach or suggest a way to coat the catalytic metal compound on standard tower packings, much less a coating of organic polymer material adhering the catalytic metal compound to a metallic substrate.

To the extent that Naeem addresses the above limitations, it discloses various combinations of dielectric layers and oxidized conducting layers (throughout Specification). Naeem fails to disclose a coating of organic polymer material.

To the extent that Hatano addresses the above limitations, it discloses formation of layers of repeating units of the below material on a substrate:



Thus, it fails to disclose a coating of organic polymer material adhering the oxidation promoter to a metallic substrate.

Thus, for the above reasons Applicant respectfully requests withdrawal of the rejection with respect to claims 1-7, 11-16, 18-29, and 34.

With respect to claim 18, Applicant respectfully traverses because Barker, Naeem, and Hatano, alone or in combination, fail to disclose, teach, or suggest the claimed subject matter, in particular a step of rotating the substrate within the vessel. Thus, the rejection of claim 18 should be withdrawn.

With respect to claim 24, Applicant respectfully traverses because Barker, Naeem, and Hatano, alone or in combination, fail to disclose, teach, or suggest:

the at least one oxidizing agent is contacted with the at least one oxidation promoter element when the at least one oxidation promoter element is in minimal or no contact with the pulping liquor, and the pulping liquor is contacted with the at least one oxidation promoter element when the at least one oxidation promoter element is in minimal or no contact with the at least one oxidizing agent

Thus, the rejection of claim 24 should be withdrawn.

With respect to claims 37-39, Applicant respectfully traverses because Barker, Naeem, and Hatano, alone or in combination, fail to disclose, teach, or suggest the claimed subject matter, in particular:

a recovery zone that receives at least one oxidizing agent, at least one oxidation promoter element (a substrate having a coating material

coated thereupon that has an oxidation promoter element) that is movable between a polysulfide generation zone and the recovery zone, wherein the substrate is rotatably secured to a support member to facilitate movement of the substrate between the polysulfide generation zone and the recovery zone

To the extent that Barker addresses the above limitations, it discloses recycling of a slurry of catalytic metal compound from a bottom of a reaction tower to above the mid-point of the tower with no reconditioning or static placement of catalytic metal compound in a packed tower (col 2, Ins. 20-44 and FIGS 1-2). Thus, it fails to disclose a substrate rotatably secured to a support member to facilitate movement of the substrate between a polysulfide generation zone and a recovery zone.

Naeem and Hatano fail to disclose, teach or suggest, at all, a substrate rotatably secured to a support member to facilitate movement of the substrate between a polysulfide generation zone and a recovery zone.

Thus, for the above reasons Applicant respectfully requests withdrawal of the rejection with respect to claims 37-39.

### **Second Claim Rejection Under 35 U.S.C. § 103:**

Claims 30-33, 26 and 40-56 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Barker (US 3,860,479) in view of Naeem (US 6,193,832) or Hatano (US 5,919,726) as applied to claims aove, and further in view of Dorris (US 5,082,526). Applicant respectfully traverses because Barker, Naeem, and Hatano, alone or in combination, fail to disclose, teach, or suggest the claimed subject matter, in particular:

at least one oxidation promoter element prepared by: coating at least a portion of a metallic substrate with a coating of organic polymer material such that one side of the coating material is adjacent the substrate and an opposite side of the coating is not exposed to the substrate; applying an oxidation promoter to the opposite side of the coating such that the oxidation promoter is at least partially embedded in the coating material (the oxidation promoter promoting the oxidation of the sodium sulfide to

generate polysulfide and comprising a transition metal oxide); and  
baking the oxidation promoter and coating of organic polymer material.

To the extent that Dorris addresses the above limitations, it discloses:

- i) manganese dioxide (col 1, ln. 54 through col 2, ln. 6)
- ii) a portion of the teachings from Barker (col 2, lns. 13-16),
- iii) partially coating activated carbon with PTFE to waterproof it (col. 2, lns. 51-55, and col 8, lns. 39-43),
- iv) activated carbon with no waterproofing (col 3, lns. 18-25),
- v) mud lime particles (throughout Specification), and
- vi) mud lime particles mixed with manganese dioxide (col 10, ln. 62 through col 11, ln. 16).

Thus, Dorris fails to disclose, teach or suggest a transition metal oxide oxidation promoter adhered to a metallic substrate with an organic polymer coating material and the rejection claims 30-33, 26 and 40-56 should be withdrawn.

With respect to claims 44 and 54, Applicant further traverses because Barker, Naeem, Hatano, and Dorris, alone or in combination, fail to disclose, teach, or suggest at least one disc being rotatable with respect to polysulfide generation and recovery zones to selectively situate the at least one oxidation promoter element within each of the polysulfide generation zone and the recovery zone. Thus, the rejection of claims 44 and 54 should be withdrawn.

With respect to claim 50, Applicant further traverses because Barker, Naeem, Hatano, and Dorris, alone or in combination, fail to disclose, teach, or suggest a substrate rotatably secured to a support member to facilitate movement of the substrate between a polysulfide generation zone and a recovery zone. Thus, the rejection of claims 44 and 54 should be withdrawn.

## **CONCLUSION**

Accordingly, it is believed that the present application now stands in condition for allowance. Early notice to this effect is earnestly solicited. Should the examiner believe a telephone call would expedite the prosecution of the application, he/she is invited to call the undersigned attorney at the number listed below.

A Petition for a Three Month Extension of Time has been contemporaneously submitted with this Amendment along with the associated fee. Otherwise, it is believed that no other fee is due at this time. If that belief is incorrect, please debit deposit account number 01-1375. Also, the Commissioner is authorized to credit any overpayment to deposit account number 01-1375.

Respectfully submitted,

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